

Title: 8th IEEE International Workshop on Engineering Semantic Agents – Intelligence and Robotics (ESAS 2013)

Workshop Organizers:

Duygu CELIK, Professor, Istanbul Aydin University, Turkey

E-mail: duygucelik@aydin.edu.tr

Mehmet A. ORGUN, Macquarie University, Australia

E-mail: mehmet.orgun@mq.edu.au

Rainer UNLAND, Professor, University of Duisburg-Essen, Germany

E-mail: Rainer.Unland at icb.uni-due.de

Behnam RAHNAMA, Professor, European University of Lefke, North Cyprus

E-mail: behnam@brahnama.com

Atilla ELCI, Professor, Aksaray University, Turkey

E-mail: atilla.elci@gmail.com

Goal of the Workshop:

ESAS 2013 has three complementary objectives:

- i. To inquire into the theory and practice of engineering semantic multi-agent systems, especially methods, means, and best cases.
- ii. To explore into unifying software engineering methodologies employed in implementing semantic MAS applications across domains.
- iii. To deploy new technologies in the fields of Semantic Intelligence and Semantic Robotics.

Theme of the Workshop:

Semantic web technologies render dynamic, heterogeneous, distributed, shared content equally accessible to human reader and software agents. Distributed agents functioning autonomously can utilize semantic Web content to gather and aggregate knowledge, reason and infer new results towards achieving their goals and generating new knowledge. Such knowledge in turn may be disseminated and used to achieve the shared goal of the agents system. Here the vision is to achieve a synergy with multi-agent systems (MAS) technologies whereby both semantics and agents will be equally in the center stage.

In unison with the main conference, the main theme of ESAS 2013 will be *'Applying semantic Web technologies in developing software agents, mobile agents and multi-agent systems towards expanding sphere of software and data '*.

In relation to the main theme, topics of interest include the following among others:

- software development,
- software systems,
- systems and agent technology,
- systems and reasoning,
- systems and semantic technology,
- robotics and intelligent behavior,
- semantic intelligence,
- database systems,
- embedded systems,
- game and entertainment systems,
- healthcare information systems,

- Internet access and use for children,
- education,
- entertainment.

Scope of the Workshop (Call-for-Papers):

Applying Semantic Technologies in Research and Development of Ontology-Enabled Multi-Agent Systems. Semantic Web technology topics are welcome.

ESAS workshop series aims at garnering the synergy of both technologies by taking up both the semantic web and the agent aspects of the common research issue. Topics of interest span a wide spectrum in both theory and practice of autonomous semantic agents, context-aware intelligent agents, agents as semantic web services, software agents, mobile agents, agent architectures, multi-agent systems, agent communities, cooperation and goal seeking through sharing policy and ontology, safety & security in systems, other QoS issues, and so on.

Mobile agent and MAS technologies are crucial in realizing multi-party dynamic application systems. Semantic Web technologies augment MAS by enabling agents with functioning based on the semantics of their mission and of the world around them. Agents, implemented as Web services in developing distributed control and processing applications, entail interesting consequences such as situation awareness, semantic composition of services, context sensitive long-lasting transactions, effecting service policies and quality levels, etc. Complex applications could become realizable with novel features such as factory floor automation for flexible production, collaborative discovery of uncharted geography (for example, cooperative labyrinth discovery), traffic management and info dissemination with facilitation of emergency services, financial markets forecasting with optimization of portfolio gain, etc.

The logic behind the semantic web might be boosted and powered using the features available in four-valued logic where in addition to dyadic true and false answers to a query, incompleteness and inconsistency take place. Such a sophisticated logic also supports Negation as Failure in addition to straight OWL open-world assumptions. The intelligence based upon this logic may be applied to the new generation of robots where they will be having a better and more reliable understanding of the surrounding environment.

We envisage a strong undercurrent of intelligent software agents, mobile agents, and MAS running through this workshop; side by side with the use of semantic technologies, there are several foci of interest:

- ***Software Agents, Mobile Agents, and MAS:*** issues relating to architecture, implementation, coordination, service levels, security of pervasive semantic or otherwise agents.
- ***Agent, MAS and Semantic Web Technologies:*** concomitant utilization of specific technologies in agent, MAS, and semantic Web implementations; semantic agent communities & applications; case studies of best-practice MAS applications; projects in the making;
- ***Ontologies for Agents and MAS:*** agent cooperation and coordination ontology; ontology of workflow in MAS; ontologies for distributed applications and integration; sharing and semantic interoperability; discovery and operations on ontologies; trust & security issues;
- ***Platforms for semantic agent and MAS implementation:*** languages, frameworks, tools, integrated development environments and software engineering practices supporting semantic or otherwise software agent & MAS architectures, coordination, trust & security mechanisms, description, discovery and composition of agent-based services.

- ***Semantic Intelligence and Semantic Robotics:*** Four-Valued Logic, Hybrid Assumptions, Multi-World Assumptions, Inconsistency, Incompleteness, Semantic Reasoning and Decision Making, Semantic Agents as Robots. Robotics Control based on Semantic Intelligence.
- ***Other subjects of relevance in*** semantic technologies, semantic software agents, mobile agents, agent-based and multi-agent systems.

Program Committee: (approval pending)

Murat Sensoy, Ozyegin University, Turkey
 Alex Abramovich, Gordon College, Israel
 Alexander Kostin, Girne American University, TRNC
 Angus F.M. Huang, National Central University, Taiwan
 Aneesh Krishna, Curtin University Perth, Western Australia
 Bo Hu, University of Southampton, UK
 Chattrakul Sombatheera, Mahasarakham University, Thailand
 Constantine Mantratzis, University of Westminster, London, UK
 Eui-Hyun Jung, Anyang University, Korea
 Frank F. P. Dignum, Universiteit Utrecht, The Netherlands
 Ibrahim Gokcen, GE International, Turkey
 Laurentiu Vasiliu, DERI Galway, Ireland
 Levent Yilmaz, Auburn University, USA
 M. Osman Unalir, Egean University, Turkey
 Markus Schaal, University College Dublin, Ireland
 Maurice Pagnucco, University of New South Wales, Australia
 Mehmet Emin Aydin, University of Bedfordshire, UK
 Mustafa Jarrar, Sina Institute - Birzeit University, Palestine
 R. Cenk Erdur, Aegean University, Turkey
 R. Rajesh, Bharathiar University, India
 Rym Z. Mili, University of Texas at Dallas, USA
 Sule Yildirim Yayilgan, Gjøvik University College, Norway
 Susmit Bagchi, Gyeongsang National University, South Korea
 Vijayan Sugumaran, Oakland University, USA
 Vitaliy Mezhuev, Berdyansk State University, Ukraine
 Zeki Bayram, Eastern Mediterranean Univ., TRNC
 Natalie van der Wal, VU University, Amsterdam
 Fabiano Dalpiaz, Trento University, Italy

Important Dates:

Deadline for paper submission: March 20th, 2013
 Notification of acceptance: April 21th, 2013
 Camera-ready due: May 5th, 2013

Submission:

Papers must be submitted electronically via the ESAS 2013 Submission Page (<http://myreview.cs.iastate.edu/ESAS2013>). The format of submitted papers should follow the guidelines for the IEEE conference proceedings. All papers will be carefully reviewed by at least three reviewers. Papers should be no more than 6 pages. Accepted papers will be published in the workshop proceedings of COMPSAC 2013, by the IEEE Computer Society Press. At least one of the authors of each accepted paper must register as a participant of the

workshop and present the paper at the workshop, in order to have the paper published in the proceedings.

The authors of selected papers may be invited to submit an extended version of their papers for possible publication in a special issue of a relevant journal and/or an edited book. Details will be revealed pending conclusion of negotiations.

A special issue of the best papers of ESAS 2006 has been published with Multiagent and Grid Systems - An International Journal, IOS Press, ISSN 1574-1702; [Volume 4, Number 3, 2008, pp: 293-346](#).

The authors of the papers accepted at ESAS 2007 and 2008 were invited to submit extended versions of their papers for publication in the Special Issue on Engineering Semantic Agent Systems of [Expert Systems: The Journal of Knowledge Engineering](#) by Wiley-Blackwell Publishing. Vol 28, No. 5

The authors of ESAS 2009/10 were invited to submit an extended and revised version of their papers for publication in an edited volume titled Semantic Agent Systems: Foundations and Applications by Springer-Verlag; the book has been published (<http://www.springer.com/engineering/mathematical/book/978-3-642-18307-2>).